phosphates are precipitated out quantitatively, and scant growth occurs; (2) when glycerol phosphate is used, the phosphorus stays in solution and better growth results; (3) the use of protective colloids (agar and potassium silicate) to prevent precipitation is accompanied by beneficial results; (4) mechanical agitation of the cultures greatly improves the growth by hastening the solution of $CaCO_3$, and thus maintaining the proper reaction. In the course of the work an all-glass apparatus for the determination of nitrogen was devised.[11]—J. J. WILLAMAN.

**Distribution of dissolved oxalates in phanerogams.**—MOLISCH[12] finds dissolved oxalates appearing rather generally distributed in phanerogams. All investigated species of the following families bear much dissolved oxalate: Polygonaceae, Chenopodiaceae, Amarantaceae, Aizoaceae, Begoniaceae, Melastomaceae, Oxalidaceae, Cannaceae, and Marantaceae. While in most cases this chemical character, like many other chemical characters, runs by families, this is not always the case. In certain families some genera are very rich in dissolved oxalates, while other genera contain little or none; this is true of Commelinaceae and Cactaceae.—WM. CROCKER.

**Water movements in plants.**—RENNER[13] answers NORDHAUSEN's criticism (Ber. 1916) of his earlier work (Flora, 1911) on water movement in plants, and gives a number of experiments to confirm, in the main, his earlier generalizations. He also gives a brief statement on the "saturation deficit" and the "energetics of water movement" in plants.—WM. CROCKER.

**Turgor and osmotic pressure.**—THODAY[14] gives a simple elementary analysis of turgor, osmotic pressure, and saturation deficit relations of plant cells and the conditions that lead to the movement of water from cell to cell in the plant. The article ought to do much to clear up the confusion in reference to this field.—WM. CROCKER.

**Hydnaceae of North Carolina.**—COKER[15] has published a monograph of the Hydnaceae of North Carolina, illustrated by numerous excellent photographic plates. Six genera are presented, represented by 29 species, 2 new species being described in *Hydnellum* and 1 in *Phellodon*.—J. M. C.

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